

Temporary Thermocouple Attachment for Thermal/Vacuum Testing at Non-Extreme Temperatures

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Post-test examination and data analysis that followed a two week long vacuum test showed that numerous self-stick thermocouples became detached from the test article. The thermocouples were reattached with thermally conductive epoxy and the test was repeated to obtain the required data.

Because the thermocouple detachment resulted in significant expense and rework, it was decided to investigate the temporary attachment methods used around NASA and to perform a test to assess their efficacy.

The present work describes the original test and the analysis that showed that the thermocouples had become detached, temporary thermocouple attachment methods assessed in the retest and in the thermocouple attachment test, and makes a recommendation for attachment methods for future tests.